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CLAIMS

What is claimed is:

1 1. A disposable absorbent article comprising:
2 a topsheet;
3 a backsheet; and
4 an absorbent core disposed therebetween;
5 wherein at least one of said backsheet, topsheet, and absorbent core is
6 constructed of an absorbent composite including
7 an absorbent layer of hydratable fine fibers in the form of microfibril
8 obtained from cellulose or a derivative thereof, and super absorbent polymer (SAP)
9 particles bonded together by said hydratable fibers, and
10 a nonwoven substrate supporting said absorbent layer, said absorbent
11 layer being coated thereupon.

1 2. The article of claim 1, further comprising a pair of longitudinally-
2 extending, upstanding cuffs spaced laterally from said core, each said cuff including
3 a folded portion of said topsheet and a longitudinally-extending absorbent composite
4 secured within said folded portion, said longitudinally-extending absorbent composite
5 including
6 an absorbent layer of hydratable fine fibers in the form of microfibril obtained
7 from cellulose or a derivative thereof, and super absorbent polymer (SAP) particles
8 bonded together by said hydratable fibers, and
9 a nonwoven substrate supporting said absorbent layer, said absorbent layer
10 being coated thereupon.

1 3. The article of claim 2, wherein said core includes said first absorbent
2 composite.

1 4. The article of claim 3, wherein said first absorbent composite and said
2 longitudinally extending absorbent composites of said cuffs are sections of one

1 continuous absorbent composite structure positioned about a crotch region of said
2 article.

1 Sub 5. The article of claim 2, wherein said nonwoven substrate is a section
2 of said topsheet.

1 6. The article of claim 1, wherein said backsheet is formed from said
2 absorbent composite, said absorbent layer including a low cross link SAP adapted to
3 gel block upon wetting such that said backsheet is substantially impervious when wet
4 and said backsheet is breathable when dry.

1 7. The absorbent article of claim 6, wherein said SAP are water-
2 swellable particles included in a concentration in the range of about 50g/m² to about
3 500 g/m².

1 8. The absorbent article of claim 1, wherein said absorbent core includes
2 a prefabricated sheet of said absorbent composite.

1 9. The absorbent article of claim 8, wherein said absorbent composite of
2 said core includes a plurality of said absorbent layers, said layers being spaced apart
3 from one another such that non-coated surface sections of said substrate are exposed
4 therebetween.

1 10. The absorbent article of claim 9, wherein said non-coated surface
2 sections form wicking zones between said absorbent layers.

1 11. The absorbent article of claim 8, wherein said absorbent layers are
2 laterally spaced, elongated segments.

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1 12. The absorbent article of claim 8, wherein said absorbent composite
2 layer has a corrugated configuration characterized by a plurality of pleats at which
3 distinct adjacent sections of said absorbent composite are mutually adhered.

1 13. The absorbent article of claim 1, wherein said absorbent composite
2 forms said backsheet and said core, said backsheet having a section providing said
3 nonwoven substrate and said absorbent layer being concentrated at a crotch region
4 of said backsheet to form said absorbent core.

1 14. The absorbent article of claim 1, wherein said core includes said
2 absorbent composite, said absorbent composite further including one or more of said
3 absorbent layers disposed over said nonwoven substrate.

1 15. The absorbent article of claim 1, wherein said absorbent composite
2 further includes a concentration of pulp material, said absorbent layer and said
3 nonwoven substrate forming a sheet disposed about said pulp concentration such that
4 said pulp concentration is disposed between at least two layers of said sheet of
5 absorbent layer and nonwoven substrate.

1 16. The absorbent article of claim 1, wherein said absorbent composite
2 forms at least a portion of said topsheet and said absorbent core, said topsheet having
3 a section providing said nonwoven substrate and said absorbent layer forming said
4 core.

1 17. The absorbent article of claim 1, wherein said absorbent layer includes
2 low-crosslink, low gel strength SAP having free swell capacities of over 40 g/g and
3 such that said absorbent layer is adapted to gel block upon wetting so as to be
4 substantially impervious but is breathable when dry.

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18. A disposable absorbent article comprising:
a topsheet;
a backsheet;
an absorbent composite including
an absorbent layer of hydratable fine fibers in the form of microfibril
obtained from cellulose or a derivative thereof, and absorbent polymer (SAP)
particles bonded together by said hydratable fibers, and
a nonwoven substrate supporting said absorbent layer, said absorbent
layer being coated thereupon; and
wherein said absorbent layer is disposed between the topsheet and backsheet,
and generally centrally at a location identified as a crotch region, said absorbent layer
providing an absorbent core for absorbing bodily exudates received in said crotch
region.

19. The article of claim 18, wherein said absorbent layer is supported
underneath a section of said topsheet, such that said section of said topsheet provides
said nonwoven substrate of said absorbent composite.

20. The article of claim 18, further comprising a pair of longitudinally-
extending, upstanding cuffs spaced laterally from said absorbent core, each said cuff
including a folded portion of said topsheet and a longitudinally-extending absorbent
composite secured within said folded portion, said longitudinally-extending absorbent
composite including
an absorbent layer of hydratable fine fibers in the form of microfibril obtained
from cellulose or a derivative thereof, and super absorbent polymer (SAP) particles
bonded together by said hydratable fibers, and
a nonwoven substrate supporting said absorbent layer, said absorbent layer
being coated thereupon.

1 21. The article of claim 18, wherein said absorbent composite located at
2 said crotch region and said longitudinally extending absorbent composites of said
3 cuffs are sections of one continuous absorbent composite structure positioned about
4 the crotch region.

1 22. The article of claim 18, wherein said absorbent layer is supported on
2 said backsheet, such that a section of said backsheet provides said nonwoven
3 substrate of said absorbent composite.

1 23. The article of claim 20, wherein said absorbent layer includes a low
2 cross link SAP adapted to gel block upon wetting such that said backsheet is
3 substantially impervious when wet and said backsheet is breathable when dry.

1 24. The absorbent article of claim 18, wherein said SAP are water-
2 swellable bodies included in a concentration of about 20 gsm and said nonwoven
3 substrate is an SMS having a basis weight in the range of about 10 gsm to 60 gsm.

1 25. The absorbent article of claim 18, wherein said absorbent composite
2 of said core includes a plurality of said absorbent layers, said layers being spaced
3 apart from one another such that non-coated surface sections of said substrate are
4 exposed therebetween, said non-coated surface sections forming wicking zones
5 between said absorbent layers.

1 26. The absorbent article of claim 25, wherein said absorbent layers are
2 laterally spaced, elongated segments.

1 27. The absorbent article of claim 18, wherein said absorbent composite
2 layer has a corrugated configuration characterized by a plurality of pleats at which
3 distinct adjacent sections of said absorbent composite are mutually adhered.
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1 28. The absorbent article of claim 18, wherein said absorbent composite
2 further includes a concentration of pulp material, said absorbent layer and said
3 nonwoven substrate forming a sheet disposed about said pulp concentration such that
4 said pulp concentration is disposed between at least two layers of said sheet of
5 absorbent layer and nonwoven substrate.

1 *Sub A1* 29. The absorbent article of claim 18, wherein a plurality of sections of
2 said topsheet is spaced from said topsheet and alternating sections of said topsheet
3 are secured to said backsheet, each said spaced topsheet section including one or
4 more of said absorbent layers such that said topsheet forms said nonwoven substrate
5 of said absorbent composite.

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30. In a disposable absorbent having an absorbent core disposed between a topsheet and a backsheet, a prefabricated absorbent composite comprising:

an absorbent layer of hydratable fine fibers in the form of microfibril obtained from cellulose or a derivative thereof, and absorbent polymer (SAP) particles bonded together by said hydratable fibers, and

a nonwoven substrate supporting said absorbent layer, said absorbent layer being coated thereupon;

wherein said absorbent layer is disposed between the topsheet and backsheet, and generally centrally in the article at a location identified as a crotch region, said absorbent layer providing an absorbent core for absorbing bodily exudates received by the crotch region.

31. The absorbent composite of claim 31, wherein said absorbent layer is supported underneath a section of the topsheet, such that said section of topsheet provides said nonwoven substrate of said absorbent composite.

32. The absorbent composite of claim 30, wherein the article includes a pair of longitudinally extending, upstanding cuffs spaced laterally from said absorbent core, each cuff having two sheet layers, and wherein said absorbent composite includes two longitudinally-extending composite sections extending upwardly from the crotch region into the cuffs and between the cuff layers, said absorbent composite forming an absorbent structure about the crotch region.

33. The absorbent composite of claim 30, wherein said absorbent layer is supported on a section of the backsheet, such that said backsheet section provides said nonwoven substrate of said absorbent composite.

34. The absorbent composite of claim 33, wherein said absorbent layer includes a low cross link SAP adapted to gel block upon wetting such that said

1 backsheet section is substantially impervious when wet and said backsheet section
2 is breathable when dry.

1 35. The absorbent composite of claim 34, wherein said low cross-link
2 SAP is low-gel strength SAP characterized by a free swell capacity greater than about
3 40 g/g.

1 36. The absorbent composite of claim 30, wherein said SAP are water-
2 swellable bodies included in a concentration of about 50 gsm to 500 gsm.

1 37. The absorbent composite of claim 30, wherein said absorbent
2 composite of said core includes a plurality of said absorbent layers, said layers being
3 spaced apart from one another such that non-coated surface sections of said substrate
4 are exposed therebetween, said non-coated surface sections forming wicking zones
5 between said absorbent layers.

1 38. The absorbent composite of claim 30, further comprising a coating of
2 mineral oil over the SAP particles of the absorbent layer, said coating being adapted
3 to retard the initial receipt of liquid by the SAP in the absorbent layer.

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